The Cary Arboretum

of The New York Botanical Garden

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Arboretum Names Its Internal Roads

One of the unusual tasks recently completed by the Cary Arboretum was creating appropriate names for its five-mile internal road system, which will link up the various parts of the collections and grounds on the 2000 - acre estate, and names for the various buildings on the property. Because the day is getting closer when plants will start to be set out on the grounds, it is important that the various parts of the road system and other features of the property be named. This identification system will be the key for staff members and visitors in finding their way around the Arboretum in future years.

The map enclosed with this newsletter shows the "official" designations for the internal roads, buildings and other locations.

In most cases, names were chosen to perpetuate those who owned the original farms purchased by Mr. and Mrs. Melbert Cary to form their estate in the 1930's.

In some cases, a more current name has been used. A few of the buildings bear temporary designations that will change when their use changes; for instance, the Conover House, an old farmhouse formerly owned by the Conover family, is now used by the Arboretum as its temporary Administration Building. When the new solar-heated Administration and Research Building is ready, the old farmhouse on Fowler Road will regain the name Conover House. Leland Lovelace House, named for the family that lived there many years, will bear that name when the Education and Wildlife offices, now housed there, move to the remodeled Gifford House.

Filkins Bridge is named after the original land grantee of the property, Henry Filkins, of Flushing, Long Island. Filkins was one of the holders of a huge tract of land granted by the British Crown to nine New York businessmen in 1697, a grant known as the Great Nine Partners Patent.

Patriots Bridge commemorates a 1776 incident when British sympathizers—Tories—defied a militia guard of 400 and assembled in Washington Hollow. Loyal patriots marched from Sharon, Connecticut, and were successful in breaking up the Tory band with the help of other volunteers in the area.

The names on the map contain many other nuggets of local history. For example, the name "Flagler Drive" commemorates not only Mrs. Cary's maiden name, but also one of her local ancestors, Zacharaiah Flagler, a German Palatine who, in the early 1700's, became the first of his family to settle in the area now occupied by the Arboretum.

Environmental Symposium To Be Held October 18th

A day-long symposium entitled "Environmental Law", will take place at Vassar College on October 18th. Jointly sponsored by the Cary Arboretum and the Dutchess County Bar Association, the symposium will focus on problems and solutions of environmental land use. The sponsors are being assisted by the McCann Foundation, a non-profit, philanthropic fund that makes grants to selected civic endeavors in the Mid-Hudson area.

Among the authorities on environmental law who will speak at the panel discussions are: David Sive, Chairman, Environmental Law Institute; Russell Brenneman, Connecticut attorney and Chairman of the Connecticut Energy Advisory Board; David Callies, attorney and co-author of "The Taking Issue: Analysis of the Constitutional Limits of Land Use Control"; Nicholas Robinson, member of the Environmental Law Committees of the American Bar Association and the New York State Bar Association; and Arthur Savage, Chairman, Special Committee on Environmental Law, New York State Bar Association.

The two major topics to be discussed are "Land Use and Open Space" and "Zoning and Planning". The day's program has been designed to be of particular interest to members of the legal profession and to interested laymen concerned with land-use questions.

Dr. Howard S. Irwin, president of the New York Botanical Garden and director of the Cary Arboretum, will deliver the welcoming remarks with Mr. Herman Levine, president of the Dutchess County Bar Association. Dr. Thomas S. Elias, assistant director of the arboretum, will introduce the symposium and will act as moderator for a panel discussion as will Mr. John Kennedy, County Attorney for Dutchess County.

Friends of the Arboretum are welcome to attend. Registration will take place from 8:30 to 9:30 A.M. at Chicago Hall, Vassar College. A fee of $10 includes luncheon; student fee is $5. For further information and a brochure of the program, please contact Miss Maria Galli at the Cary Arboretum, Box AB, Millbrook, N. Y. 12545, or call 677 - 5071.

Robert Goodland - Ecologist in Motion

The usual greeting to Robert Goodland at the Cary Arboretum is "When are you leaving?" During the past year, the chairman of the Department of Environmental Assessment has traveled to Europe, Mexico (twice), Nicaragua, South America and Asia. The European visit had a dual purpose: to attend the First International Ecology Conference at the Hague, The Netherlands, and to deliver a commemorative paper in Copenhagen on Eugen Warming, the 19th century Danish scientist whom Dr. Goodland regards as the founder of modern tropical ecology. The other trips were all to study the environmental implication of various economic development projects, principally large hydroelectric dams and tropical highways.

Dr. Goodland started his traveling career as an undergraduate at McGill University when he carried out field work for the National Museum of Canada in Ungava in northern Canada, one of the most remote and least explored areas of the world, near the soon-to-be-built James Bay power projects. The subject for his master's degree was ecology of a remote savanna region of Guyana, research for which was done in that country on the northeast rim of South American. Upon completion of his doctorate, also from McGill University, on ecosystem analysis in Central Brazil, he became Research Exchange Fellow of the National Research Council of Canada at the Biological Institute of the University of Brasilia, where he organized and taught the first ecology program to be offered there. He is fluent in a number of languages, including Portuguese, and many of his research findings and scientific papers have been published in that language.

Since joining the Arboretum staff in 1972, Dr. Goodland has assessed development projects in the United States, Brazil, Paraguay, El Salvador, Nicaragua and Guatemala for the World Bank, United Nations, World Health Organization, national governments and international development groups. As a member of a six-man mission sent out to advise the Malaysian government on incorporating environmental and conservation standards into its latest long-term national development plan, Dr. Goodland made the trip to Malaysia on behalf of the World Bank. This was the first time a country has included such criteria in the formulation of a national economic plan. Dr. Goodland supplied ecological advice and compiled and edited the mission's report.

The recent publication of "Amazon Jungle: Green Hell to Red Desert?" written with Dr. Howard Irwin, Director of the Arboretum, marks the sixth book or full-length report bearing Dr. Goodland's name. "Green Hell" is an ecological discussion of the environmental impact of the highway construction program in the Amazon basin. The vast program includes five highways—two of which are east and west and three cutting approximately north-south through the virgin Brazilian jungle.

The first of these highways, the Transamazon, was started in 1958, and the final completion dates for the entire system are scheduled from 1976 through 1978. Dr. Goodland compares the project with an attempt to link New York with San Francisco in the 17th century. The book evolved from findings made during an applied ecology course Dr. Goodland conducted while he was teaching at the National Amazonian Research Institute in Manaus, Amazonia. He originally had planned to write an article on the environmental impact of the highway system, and it gradually expanded to book length.

"Power Lines and the Environment," edited by Dr. Goodland and published in 1973, has been in such demand that it has recently gone into its third printing. He also had edited a forthcoming book, "Buildings and the Environment," based on the proceedings of a conference sponsored by the Cary Arboretum and held in November, 1974.

Dr. Goodland is 29, a bachelor and lives in the Crear House on the Cary Arboretum property in Millbrook. His hobbies include furnishing his early American farmhouse, cooking, giving dinner parties, walking and bicycling. He collects antiques and feels that it is sad, at this time, that products are most highly prized at or just before acquisition. He prefers those that mature and improve with age, i.e. antiques vs. automobiles, a tweed jacket vs. double-knit polyester, and he feels this attitude is environmentally significant. As a professional ecologist, he frowns on motorized transportation and walks the two miles from his house to his office several times each day. For ecological reasons he has become progressively more vegetarian because he thinks a meat-free diet is environmentally healthier and economically sounder. In any case, he says that "world food shortages may force future generations to become vegetarians."

A project he'd like to see carried out at the Cary Arboretum involves a "no-waste" picnic area for the Friends of the Arboretum. All disposable garbage would be recycled or put into compost, thereby involving the Friends in a "learning experience" in line with the environmental philosophy practiced by Robert Goodland. "This would be a small step," he says, "but this type of approach may avert my admittedly pessimistic prognosis for the future of mankind."

Insects and Nectar

Above: Ant gathering nectar on trumpet creeper bud. Two nectaries are visible as small round structures.

By Hellen Gelband

Why are certain plants so attractive to insect visitors? In many cases the plant makes a tasty dinner salad for destructive chewing insects, such as Japanese beetles. The situations studied by Dr. Thomas S. Elias at the Cary Arboretum are quite the opposite of this, focusing on relationships mutually beneficial to insect and plant. He has recently published papers on two species of plants which were grown and studied in the Cary greenhouse and nursery.

Turnera ulmifolia, a small plant with striking bright yellow flowers was grown from seed under greenhouse conditions approximatating the climate of its native South America. Two small protuberances are found on the stalk of each leaf on the plant, through which Turnera releases a sugar solution (nectar) which attracts insects, notably ants. The ants in no way harm the plant and may, in fact, be instrumental in keeping other insects from destroying its leaves and flowers. As the flowering season comes to an end, ants can be seen carrying off mature seeds, possibly to store away in the nest as a food reserve. In the course of this operation, seeds are dropped randomly, scattering them to grow next year.

At the time that ants are busily collecting nectar from Turnera leaves, bees are just as busy taking nectar and pollen from the flowers and pollinating as they go. In one phase of the research Elias and his associates analyzed the bee-attracting and ant-attracting nectars and found significant differences in their chemical makeups, shedding some light on the total insect/plant interaction. Another important part of this work was the microscope study of plant parts related to insect attraction. A detailed account and summary of the research appears in the July issue of "The American Journal of Botany" in an article entitled "The foliar and floral nectaries of Turnera ulmifolia L."

The trumpet creeper (Campsis radicans) is a vine with insect associations similar to those of Turnera. A recent (July 25, 1975) issue of "Science" magazine carries a report on Elias' ongoing study of this plant, which is native to the midwestern and eastern United States. Trumpet creepers are easily spotted along roadsides and fencerows because of their bright orange tubular flowers and climbing habit. They are so proliferous and hardy in midwestern agricultural areas that farmers consider them a nuisance and will take great pains to be rid of them. The feature that distinguishes them for research at Cary is the production of nectar within the flower and at four different sites outside of it. Bees and hummingbirds are attracted to the flowers, which they pollinate in the act of collecting nectar from deep inside the floral tube.

Ants travel from the leaf stalks to the buds, to the outsides of the flowers, to the young fruits, consuming nectar produced in all of those places. The type of ant found on trumpet creeper varies from plant to plant and between geographical areas. As the more aggressive species of ants visit plants for nectar, they will attack and drive off some deleterious insects by stinging and biting the aliens. This "ant guard" phenomenon is an important aspect of animal/plant relationships and one that is of continuing interest to Dr. Elias in his research efforts.

Miss Gelband is a research assistant to Dr. Elias.

Right: Turnera flower, bright yellow in color.

Below: Flowering branch of the trumpet creeper; flowers are deep orange.

FRIENDS OF THE CARY ARBORETUM
WALKING & BICYCLING GUIDE MAP

Information and Guidelines

A special area has been set aside for enjoyment by the Friends of the Cary Arboretum in a grove of apple trees, directly uphill from the Arboretum Education and Wildlife Center (Leland Lovelace House on the map), located on Fowler Road in Millbrook. It can be reached by turning off Route 44 at the Cottonwood Inn and going north on Fowler Road. The Education and Wildlife Center is the second house past the wooden bridge. The parking area is behind the building, convenient to the members' area.

The area is furnished with picnic tables and trash receptacles. Nearby, one of the roads of the Arboretum's internal road system leads into the Cannoo Hills. Members are invited to stroll along the paved road system and enjoy the countryside.

Members making use of the area are requested to observe these guidelines:

PLEASE STAY ON THE PAVED ROAD SYSTEM ONLY. Woods, unpaved roads and slopes are designated as collection areas. Even one footfall in the wrong place can destroy a specimen plant.

Hours open: 10:00 a.m. to sunset, seven days a week.

Park in designated parking area.
No fires in the members' area or anywhere on the Arboretum grounds.
Please extinguish all matches and cigarette butts carefully.
No firearms or other weapons.
Bicycling, cross-country skiing, back-packing ON THE PAVED INTERNAL ROAD SYSTEM ONLY. No snowmobiles, motorbikes or motorcycles are allowed.
No intoxicating beverages.
Please do not cut down or dig up any plants or pick wildflowers. They grow for your enjoyment and the enjoyment of others who will visit after you.
Please put all trash in the receptacles provided.
Houses and buildings on the Arboretum grounds are not open to members except for lectures, classes and by special arrangement with an authorized staff member.
Ponds also are off limits.
The internal road system will be closed to the public during the deer hunting season in the late fall.

We assume that any Friend of the Cary Arboretum is a friend of Nature, too. Thank you.

THE CARY ARBORETUM
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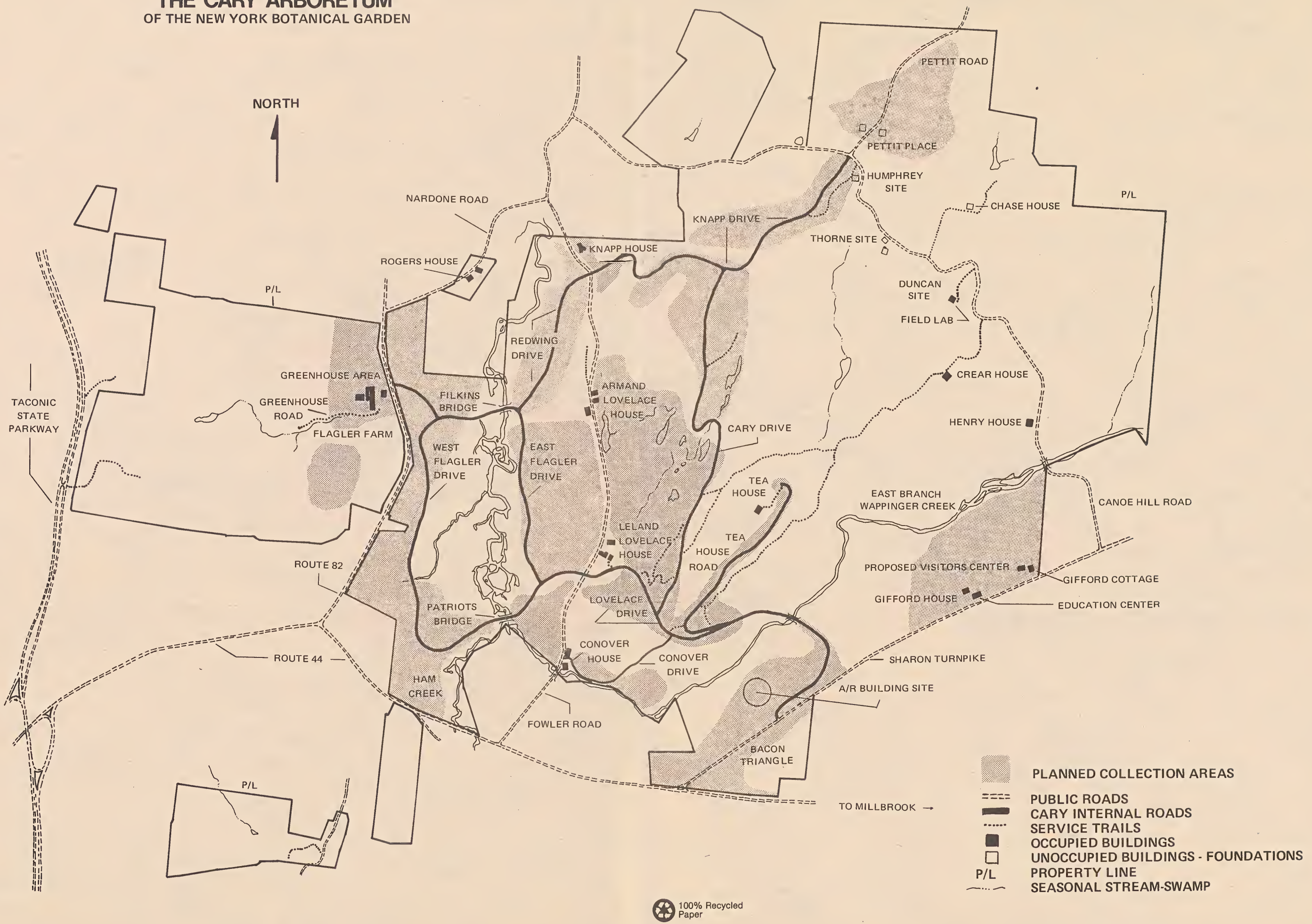

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Cary Perspectives

By Howard S. Irwin,
Director Cary Arboretum

This year we are three-quarters into the 20th century; next year marks our country's bicentennial. Can it be that there are people of any ideological or political persuasion who fail to see that the 21st century will resemble the 20th only slightly? Is it possible that institutions of research and learning, whose focus is necessarily directed to the next century, still conduct business as usual? Is it not to court potential disaster, rather than even postpone it, to wait for "leadership from Washington?" Is it humanity's fate to await some cataclysmic disaster to force vision and action within the constraints of a global world of startling complexity?

"We are not used to a complicated civilization," Walter Lippman once summarized. "We don't know how to behave when personal conduct and eternal authority have disappeared. There are no precedents to guide us, no wisdom that wasn't meant for a simpler age. We have changed our environment more quickly than we know how to change ourselves." How can it be that in a world whose population expands by 100 million souls each year, in a world where each citizen of this country consumes 30 to 40 times as much energy as in each of a hundred "developing" countries, in a world with but 27 days' food supply, educated people can still define these problems as someone else's business? Are we totally immobilized?

For the first time in human history, there now appears a conjunction between our need to survive and our once idealistic suggestions about global humanity and a society of reduced expectations, that our own future and that of our children are directly related to attenuating the accumulation of goods and the plundering of the earth's resources. We must teach that virtue lies elsewhere.

Our options for the future have never been so narrow, but neither have they ever been so open. Our choice is to succeed at surviving in a world dramatically unlike that of the present – or not to survive at all. Day by day the mist clears a little more and the equation that is revealed is just that simple.

The Cary Arboretum was created to provide a special focus on certain biological and ecological realities of the future. It is not the Arboretum's function to reinvent or reform, but it will try, by commitment and example, to stimulate ideas and raise the public consciousness to the responsibilities before us in understanding, managing, and respecting the boundaries of a plant-dominated and -dependent living world. Moreover, we know how important it is that such action be undertaken not just by our minds but also our hearts, for without an emotional commitment there is no security in even the strongest intellectual persuasion. We trust that you, the friends of the Cary Arboretum, concur.

FALL EDUCATION COURSES AT THE ARBORETUM

Twenty-three different walks, demonstrations, slide talks, and courses will be offered in the fall education program at the Cary Arboretum. Details of dates and times will be published in a brochure which will be mailed to Friends of the Arboretum and other education program participants in the early fall. If you are not already on the list to receive a brochure, please phone the Education Office at 677 - 5725 or write to the Education Center, The Cary Arboretum, Box AB, Millbrook, New York 12545.

Members of the Friends of the Arboretum are entitled to a 20% discount on courses.

A program for persons interested in participating in the work of the Arboretum on a volunteer basis will be organized in the autumn. For further details of this program, please call the Education Center.

BURKE REHABILITATION CENTER ANNUAL FLOWER SHOW

The New York Botanical Garden and the Burke Rehabilitation Center will be the beneficiaries of the Center's annual flower show on September 26, 27, and 28. The show will be held at the Burke Rehabilitation Center, Mamaroneck Avenue, White Plains, New York. Admission will be $2.50 for adults and 50¢ for children under 12.

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